

1. In a requesting computer system that is network connectable along with one or more other computer systems to a network, a method for more accurately determining if the network has sufficient available resources to transfer a data stream, the method comprising:

an act of broadcasting a start admission control message, the start admission control message signaling to the other computer systems that an active probing experiment is to be conducted;

an act of conducting an active probing experiment to identify the available bandwidth of the network, the active probing experiment detecting network load caused by any other data stream and companion data stream being transferred from a transmitting computer system;

an act of determining if the network has sufficient available bandwidth to transfer the data stream based on the results of the active probing experiment; and

an act of broadcasting an end admission control message, the end admission control message signaling to the other computer systems that the active probing experiment has completed.

2. The method as recited in claim 1, wherein the act of conducting an active probing experiment to identify the available bandwidth of the network comprises performing promiscuous mode measurements.

3. The method as recited in claim 1, wherein the act of conducting an active probing experiment to identify the available bandwidth of the network comprises performing a packet-pair test.

4. The method as recited in claim 1, wherein the act of conducting an active probing experiment to identify the available bandwidth of the network comprises act of detecting network load caused by a companion stream that corresponds to a variable rate stream being transferred on the network, the combined data transfer rate of the companion stream and the variable rate stream at least approximately the maximum data transfer rate of the variable rate stream.

5. The method as recited in claim 1, wherein the act of conducting an active probing experiment to identify the available bandwidth of the network comprises an act of conducting an abbreviated active probing experiment to validate an admission control cache entry.

6. The method as recited in claim 1, further comprising:

an act of receiving an application request to admit the data stream onto the network at a specified data transfer rate prior to broadcasting the start admission control message.

7. The method as recited in claim 1, wherein the data stream is a variable rate data stream.

8. In a transmitting computer system that is network connectable along with one or more other computer systems to a network, the network transferring a variable rate data stream that is being transmitted from the transmitting computer system, a method for more accurately representing the bandwidth that can be consumed by the variable rate data stream during an active probing experiment, the method comprising:

an act of identifying a maximum data transfer rate for the variable rate data stream, the maximum data transfer rate representing the greatest data transfer rate at which the variable rate data stream is to be transmitted;

an act of transmitting the variable rate data stream at a data transfer rate less than the maximum data transfer rate;

an act of receiving a start admission control message from a requesting computer system, the requesting computer system being a computer system that is to conduct active probing to determine if the network has sufficient bandwidth to transmit a new data stream from the requesting computer system; and

an act of transmitting a companion data stream along with the variable rate data stream in response to the start admission control message, the combined data transfer rate of the companion data stream and the variable rate data stream at least approximating the maximum data transfer rate.

9. The method as recited in claim 8, wherein the act of identifying a maximum data transfer rate for the variable rate data stream comprises an act of receiving an application request.

10. The method as recited in claim 8, where the act receiving a start admission control message from a requesting computer system, comprises an act of receiving a start admission control message from a requesting computer system that is validating an admission control cache entry.

11. The method recited in claim 8, further comprising:

an act of receiving an end admission control message from the requesting computer system; and

an act of terminating the companion data stream in response to the end admission control message.

12. The method as recited in claim 8, wherein the variable rate data stream is an A/V data stream.

13. In a transmitting computer system that is network connectable along with one or more other computer systems to a network, the network transferring a variable bit rate data stream that is being transmitted from the transmitting computer system, a method for more accurately representing the bandwidth that can be consumed by the variable bit rate data stream during an active probing experiment, the method comprising:

an act of identifying a maximum data transfer rate for the variable rate data stream, the maximum data transfer rate representing the greatest data transfer rate at which the variable rate data stream can be transmitted;

an act of transmitting the variable rate data stream at a data transfer rate less than the maximum data transfer rate; and

a step for temporarily simulating that the variable rate stream is being transmitted at the maximum data transfer such that other computer systems performing active probing experiments generate more accurate results.

14. The method as recited in claim 13, wherein the step for a step for temporarily simulating that the variable rate stream is being transmitted at the maximum data transfer comprises:

a corresponding act of receiving a start admission control message from a requesting computer system, the requesting computer system being a computer system that is to conduct active probing to determine if the network has sufficient bandwidth to transmit a new data stream from the requesting computer system; and

a corresponding act of transmitting a companion data stream along with the variable rate data stream in response to the start admission control message, the

combined data transfer rate of the companion data stream and the variable rate data stream at least approximating the maximum data transfer rate;

a corresponding act of receiving an end admission control message from the requesting computer system; and

a corresponding act of terminating the companion data stream in response to the end admission control message.

15. In a computer system that is network connectable along with one or more other computer systems to a network, a method for efficiently and quickly performing admission control, the method comprising:

an act of identifying the current network configuration of the network;

an act of receiving an application request to admit a new data stream onto the network;

an act of referring to an admission control cache, the admission control cache having an entry that corresponds to the new data stream and the current network configuration; and

an act of determining if the data stream should be admitted onto the network based at least in part on rules contained in the entry such that the resources consumed to conduct admission control are significantly reduced.

16. The method as recited in claim 15, wherein the act of identifying the current network configuration of the network comprises an act of identifying the combined maximum data transfer rate of data streams being transferred on the network.

17. The method as recited in claim 15, wherein the act of referring to an admission control cache, comprises an act of referring to an admission control cache at the computer system.

18. The method as recited in claim 15, wherein the act of referring to an admission control cache, comprises an act of referring to an admission control cache at one of the one or more other computer systems.

19. The method recited in claim 15, wherein the act of referring to an admission control cache comprises an act of referring to an admission control cache entry that contains a previously generated indication indicating whether or not a data stream at least similar to the new data stream was admitted onto the network when the network had a network configuration similar to the current network configuration.

20. The method as recited in claim 15, wherein the act of determining if the data stream should be admitted onto the network based at least in part on rules contained in the entry comprises an act of determining if the entry is committed.

21. The method as recited in claim 15, wherein the act of determining if the data stream should be admitted onto the network based at least in part on rules contained in the entry comprises an act of referring to rules that indicate the new data stream is to be admitted to the network.

22. The method as recited in claim 21, further comprising:
an act of conducting an abbreviated active probing experiment to validate the entry.

23. The method as recited in claim 15, wherein the act of determining if the data stream should be admitted onto the network based at least in part on rules contained in the entry comprises an act of referring to rules that indicate the new data stream is not to be admitted to the network.

24. The method as recited in claim 15, wherein the act of determining if the data stream should be admitted onto the network based at least in part on rules contained in the entry comprises:

an act of determining that the entry is to be validated; and

an act of performing an active probing experiment to validate the entry.

25. A computer program product for use in a requesting computer system that is network connectable along with one or more other computer systems to a network, the computer program product for implanting a method for more accurately determining if the network has sufficient available resources to transfer a data stream, the computer program product comprising one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the requesting computer system to perform the following:

broadcast a start admission control message, the start admission control message signaling to the other computer systems that an active probing experiment is to be conducted;

conduct an active probing experiment to identify the available bandwidth of the network, the active probing experiment detecting network load caused by any other data stream and companion data stream transferred from a transmitting computer system;

determine if the network has sufficient available bandwidth to transfer the data stream based on the results of the active probing experiment; and

broadcast an end admission control message, the end admission control message signaling to the other computer systems that the active probing experiment has completed.

26. The computer program product as recited in claim 25, wherein computer-executable instructions that, when executed, cause the requesting computer system to conduct an active probing experiment to identify the available bandwidth of the network, comprise computer-executable instructions that, when executed, cause the requesting

computer system to detect network load caused by a companion stream that corresponds to a variable rate stream being transferred on the network, the combined data transfer rate of the companion stream and the variable rate stream at least approximately the maximum data transfer rate of the variable rate stream

27. A computer program product for use in a transmitting computer system that is network connectable along with one or more other computer systems to a network, the network transferring a variable rate data stream that is being transmitted from the transmitting computer system, the computer program product for implementing a method for more accurately representing the bandwidth that can be consumed by the variable rate data stream during an active probing experiment, the computer program product comprising one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the transmitting computer system to perform the following:

identify a maximum data transfer rate for the variable rate data stream, the maximum data transfer rate representing the greatest data transfer rate at which the variable rate data stream is to be transmitted;

transmit the variable rate data stream at a data transfer rate less than the maximum data transfer rate;

receive a start admission control message from a requesting computer system, the requesting computer system being a computer system that is to conduct active probing to determine if the network has sufficient bandwidth to transmit a new data stream from the requesting computer system; and

transmit a companion data stream along with the variable rate data stream in response to the start admission control message, the combined data transfer rate of the companion data stream and the variable rate data stream at least approximating the maximum data transfer rate.

28. The computer program product as recited in claim 27, further comprising one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the transmitting computer system to perform the following:

receive an end admission control message from the requesting computer system; and

terminate the companion data stream in response to the end admission control message.

29. A computer program product for use in a computer system that is network connectable along with one or more other computer systems to a network, the computer program product for implementing a method for efficiently performing admission control, the computer program product comprising one or more computer-readable media having stored thereon computer executable instructions that, when executed by a processor, cause the computer system to perform the following:

identify the current network configuration of the network;

receive an application request to admit a new data stream onto the network;

refer to an admission control cache, the admission control cache having an entry that corresponds to the new data stream and the current network configuration;
and

determine if the data stream should be admitted onto the network based at least in part on rules contained in the entry such that the time and resources consumed to conduct admission control are significantly reduced.